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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/667,009

09/19/2003

Neil Gilmartin

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EXAMINER

HOANG, HIEU T

ART UNIT

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/667,009	<b>Applicant(s)</b> GILMARTIN ET AL.	
	<b>Examiner</b> HIEU T. HOANG	<b>Art Unit</b> 2152	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11 is/are allowed.
- 6) ☒ Claim(s) 1-10, 12-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/6/2008</u> .  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. This office action is in response to the communication filed on 02/06/2008.
2. Claims 1-20 are pending.

### ***Response to Amendment***

3. The 35 U.S.C. 112 rejection of claim 11 has been withdrawn due to the amendment.

### ***Allowable Subject Matter***

4. Claim 11 is allowed.

### ***Response to Arguments***

5. Applicant's arguments have been fully considered but they are not persuasive. The main argument is on page 7 of the Remarks wherein the applicant argues that the prior art does not teach "calculating a bandwidth contribution of said target access port to said VLAN". A target access port is just a particular port whose impact of adding it to the VLAN is to be calculated, the target access port associated with a target class of service and a target bandwidth requirement. "Calculating a bandwidth contribution of said target access port to said VLAN", given its broadest reasonable interpretation, means calculating the effect of including a requested port to the VLAN, in terms of bandwidth, or whether the VLAN available bandwidth can still support this port. The prior art discloses just that (YY, [0080], [0082], fig. 3 and 4, a particular port bandwidth

has to be limited by flow min and max bandwidth, aggregated bandwidth or trunk bandwidth has to be limited by trunk min and max bandwidth, also there are class of service (priority) considerations involved in the calculation of the effect—transmit probability—of the particular flow or port) The transmit probability of the particular flow is based on the result of the bandwidth test ([0082], [0090]); and is read as bandwidth contribution of the particular flow or target access port.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-10, 12-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ngo et al. (US 2004/0042416, hereafter Ngo) and further in view of Balakrishnan et al. (US 2004/0196790, hereafter Balakrishnan).

8. For claim 1, Ngo discloses a method for providing Ethernet VLAN capacity requirement estimation, said method comprising:

receiving a VLAN including VLAN access ports (fig. 2, access ports 104), VLAN switches (fig. 2, switches 106) and VLAN trunks (fig. 2, trunk links 208),

Ngo does not explicitly disclose:

wherein said VLAN access ports include VLAN bandwidth requirements and VLAN class of service and said VLAN trunks include VLAN capacity counters and VLAN threshold parameters, receiving a target access port, said target access port including a target class of service and a target bandwidth requirement from a requestor; determining a target trunk and target switch corresponding to said target access port, wherein said target trunk corresponds to one of said VLAN trunks and said target switch corresponds to one of said VLAN switches; calculating a bandwidth contribution of said target access port to said VLAN, said calculating responsive to said VLAN trunks, said VLAN switches, said VLAN access ports, and said target access port; and transmitting said bandwidth contribution to said requestor;

However, Balakrishnan discloses:

wherein said VLAN access ports include VLAN bandwidth requirements and VLAN class of service (fig. 3, page 6, table in example 1, priority of each VLAN, min, max) and said VLAN trunks include VLAN capacity counters and VLAN threshold parameters ([0081] line 14-15, aggregate transmitted rate is the current capacity and aggregate j is the maximum threshold of the trunk),

receiving a target access port, said target access port including a target class of service and a target bandwidth requirement from a requestor ([0080] lines 16-22, a port

has an associated flow which has a priority (class of service) and min and max rate requirement);

determining a target trunk and target switch corresponding to said target access port, wherein said target trunk corresponds to one of said VLAN trunks and said target switch corresponds to one of said VLAN switches (fig. 3, target trunk is 311 and target port is the one associates with the flow);

calculating a bandwidth contribution of said target access port to said VLAN, said calculating responsive to said VLAN trunks, said VLAN switches, said VLAN access ports, and said target access port (fig. 4, [0080], [0082], [0090], calculate a particular flow bandwidth effect and transmit probability based on the stability requirement (min and max rate requirement) of the access port and aggregate link or trunk, based on current transmitted flow bandwidth); and

transmitting said bandwidth contribution to said requestor ([0080], [0082], transmit probability is calculated).

Therefore, it would have been obvious for one skilled in the art at the time of the invention to combine the teachings of Ngo and Balakrishnan to control VLAN network flow rates as disclosed by Balakrishnan (Balakrishnan, abstract)

9. For claim 2, Ngo-Balakrishnan discloses the invention as in claim 1. Ngo-Balakrishnan further discloses adding said bandwidth contribution to a target capacity counter corresponding to said target trunk resulting in a target capacity; transmitting an alert in response to said target capacity exceeding a target threshold corresponding to

said target trunk (Balakrishnan, fig. 4, step 413, is target capacity greater than max aggregate bandwidth, yes will raise a condition or an alert).

10. For claim 3, Ngo-Balakrishnan discloses the invention as in claim 2. Ngo-Balakrishnan further discloses said target threshold is an alarm threshold (Balakrishnan, [0081] line 15, maximum limit for aggregate j).

11. For claim 4, Ngo-Balakrishnan discloses the invention as in claim 2. Ngo-Balakrishnan further discloses said target threshold is a cut-off threshold (Balakrishnan, [0081] line 15, maximum limit for aggregate j).

12. For claim 5, Ngo-Balakrishnan discloses the invention as in claim 2. Ngo-Balakrishnan further discloses updating said target capacity counter with said target capacity and adding said target access port to said VLAN in response to said target capacity not exceeding said target threshold (Balakrishnan, [0039], [0040], allocate bandwidth if sum of aggregate bandwidth does not exceed maximum aggregate bandwidth of the trunk).

13. For claim 6, Ngo-Balakrishnan discloses the invention as in claim 2. Ngo-Balakrishnan further discloses said target threshold varies based on said target class of service (Balakrishnan, page 6, tables on priority levels of flows and VLAN).

14. For claim 7, Ngo-Balakrishnan discloses the invention as in claim 2. Ngo-Balakrishnan further discloses said target capacity varies based on said target class of service (Balakrishnan, page 6, tables on priority levels of flows and VLAN).

15. For claims 8, 9, and 10, Ngo-Balakrishnan discloses the invention as in claim 1. Ngo-Balakrishnan further discloses said target class of service is best effort, committed bandwidth, or priority plus (Balakrishnan, page 6 table 1, priority levels from lowest to highest).

16. For claim 12, Ngo discloses a method for providing Ethernet VLAN capacity requirement estimation, said method comprising:

receiving a VLAN (fig. 2, VLAN);

auditing said VLAN including:

checking said VLAN for structural integrity (fig. 8, steps 802-806);

computing a hub value associated with said VLAN (fig. 2, central hub R5); and

Ngo does not disclose:

computing a capacity counter value associated with said VLAN; checking capacity on a trunk associated with said VLAN; and transmitting a result responsive to said auditing.

However, Balakrishnan discloses:

computing a capacity counter value associated with said VLAN, checking capacity on a trunk associated with said VLAN ([0081] line 14-15, aggregate transmitted rate is the current capacity); and



transmitting a result responsive to said auditing ([0080], [0082], transmit probability is calculated).

Therefore, it would have been obvious for one skilled in the art at the time of the invention to combine the teachings of Ngo and Balakrishnan to control VLAN network flow rates as disclosed by Balakrishnan (Balakrishnan, abstract)

17. For claims 13 and 14, Ngo-Balakrishnan discloses the invention as in claim 12. Ngo-Balakrishnan further discloses said checking said VLAN for structural integrity includes verifying that said VLAN is complete and/or coherent (Ngo, fig. 8, steps 802-806).

18. For claim 15, Ngo-Balakrishnan discloses the invention as in claim 12. Ngo-Balakrishnan further discloses said checking said VLAN for structural integrity includes verifying a tree structure associated with said VLAN (Ngo, [0050], spanning tree).

19. For claim 16, the claim is rejected for the same rationale as in claim 1. Ngo-Balakrishnan discloses a system for providing Ethernet VLAN capacity requirement estimation, the system comprising:

a network; a storage device in communication with said network, wherein said storage device includes a VLAN database; a user system in communication with said network (Balakrishnan, [0005], world wide web with VLAN users); and a host system in communication with said network (Balakrishnan, [0028], administrator hosts).

20. For claims 17 and 18, Ngo-Balakrishnan discloses the invention as in claim 16.

Ngo-Balakrishnan further discloses said network is the Internet or an intranet (Balakrishnan, [0005], internet has VLANs as intranets).

21. For claim 19, Ngo-Balakrishnan discloses the invention as in claim 16. Ngo-

Balakrishnan further discloses said VLAN database is a relational database (Balakrishnan, page 6, table 2 is read as a VLAN relational database).

22. For claim 20, the claim is rejected for the same rationale as in claim 1.

### ***Conclusion***

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure is cited in attached form PTO-892.

24. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Art Unit: 2152

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hieu T. Hoang whose telephone number is 571-270-1253. The examiner can normally be reached on Monday-Thursday, 8 a.m.-5 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bunjob Jaroenchonwanit can be reached on 571-272-3913. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HH

/Bunjob Jaroenchonwanit/  
Supervisory Patent Examiner, Art Unit 2152